

Technology Transfers to the PRC Military and U.S. Countermeasures: Responding to Security Threats with New Presidential Proclamation

by Christopher A. Ford



The Arms Control and International Security Papers are produced by the Office of the Under Secretary of State for Arms Control and International Security in order to make U.S. State Department policy analysis available in an electronically-accessible format compatible with “social distancing” during the COVID-19 crisis.

Technology Transfers to the PRC Military and U.S. Countermeasures: Responding to Security Threats with New Presidential Proclamation

by Christopher A. Ford¹

In this addition to the *ACIS Papers*, Assistant Secretary Ford outlines the changes the United States recently announced to rules pertaining to the entry of certain students and researchers from the People's Republic of China in response to the national security challenges presented by Beijing's Military-Civil Fusion strategy.

On May 29, 2020, the United States announced a significant new change in its approach to granting visas to certain applicants from the People's Republic of China (PRC) who wish to study or conduct research in fields that the United States determines would contribute to Beijing's Military-Civil Fusion (MCF) strategy. Much as we attempted to do with the detailed explanation of our recent national security export control license changes vis-à-vis the PRC telecommunications company Huawei that was published as an *ACIS Paper* on May 22, this latest paper will not only describe these new adjustments to U.S. visa policy, but also

“situate them in the full context in which they need to be understood – specifically, as part of an ongoing U.S. effort to respond to the challenges that have unfortunately been created by the PRC's manipulation and exploitation of China-based entities (and Chinese citizens) in support of the Chinese Communist Party's (CCP's) efforts to remain in power in the PRC and to seize for itself the commanding heights of military and

technological power in the mid-21st-Century geopolitical arena.”

I. The MCF Challenge

Readers of this *ACIS Papers series* – and indeed anyone who has been following the work of the U.S. State Department's Bureau of International Security and Nonproliferation over the last two years – will by now need no reminding of the degree to which we in the United States Government have awakened to the threats presented to U.S. security by the PRC's MCF strategy. This awakening represents a recognition of the reality with which Beijing has confronted us, coupled with a determination to respond robustly to protect U.S. interests, as well as the interests of free, democratic peoples everywhere who are (or will be) menaced by the PRC's growing and increasingly provocative and destabilizing actions. Working together with key agencies, we have been making significant changes to our policies and approaches in light of this new understanding.

¹ Dr. Ford serves as U.S. Assistant Secretary of State for International Security and Nonproliferation, and is additionally performing the Duties of the Under Secretary for Arms Control and International Security. He previously served as Special Assistant to the President and Senior Director for Weapons of Mass Destruction and Counterproliferation on the U.S. National Security Council staff.

We take MCF seriously because *the PRC* takes it seriously. MCF is a national-level strategy that General Secretary Xi Jinping personally oversees. While most countries observe norms that prevent diversion of dual-use and civilian technologies to military ends — at least not, at any rate, without permission from the technology-originator — the PRC does not. Through MCF, the PRC has been deliberately eliminating the barriers between its defense industrial complex and the civilian economy. In effect, any technology available to anyone under PRC jurisdiction, *anywhere*, can be diverted to support the People's Liberation Army (PLA) and the PRC security services in support of the CCP's domestic, regional, and global ambitions. And, increasingly, it will be.

MCF's technology-acquisition and -diversion strategy is of cardinal importance to the CCP, moreover, for strategic and geopolitical reasons that should be of enormous concern to all of us in the world's free and autonomous democracies. The PRC hopes and expects by such means to position itself on the leading edge of the next "revolution in military affairs" (RMA), which it assumes will give it the keys to mid-21st Century geopolitical power just as countries at the forefront of history's several *prior* RMAs were able to use the resulting military-technological advantages to dominate the world-systems of their own eras. As we at the Department of State have warned repeatedly, technology acquisition is a central plank of the CCP's blueprint for China's global "return" to military preeminence, and has the ultimate aim of achieving the CCP's dream of seizing the leading role in world affairs by the 2049 centenary of the founding of the People's Republic of China.

I have been drawing attention to these challenges since July 2018. Most obviously, this MCF challenge represents a significant and direct national security threat to the United States, as well as to the many other countries that have been reacting with understandable alarm as Beijing has thrown to the winds Deng Xiaoping's "hide-and-bide" policy of strategic caution and has instead set out upon an increasingly aggressive, destabilizing, and provocative path in international relations — for the first time in a generation outwardly expressing (and acting upon) the strategic goals and intentions Deng had cautioned them to "hide."

But MCF also presents a policymaking challenge of *balance*, for even while we must answer these security threats with robust and vigorous responses, we must also

still work to preserve the possibility of cooperation with the PRC. Our two countries are too big, too powerful, and too enmeshed in reciprocal economic dependencies for a *purely* adversarial approach to make sense; our challenge as policymakers is to know where to draw the line. As I told a conference in March 2019:

"...[O]ur biggest challenge in dealing with China is that our relationship with Beijing has both competitive and cooperative aspects — aspects that we somehow have to manage at the same time, and for which our more purely adversarial Cold War experiences with the Soviet Union do not provide a very useful conceptual template. Our competitive mindset needs to keep us focused upon competing vigorously and effectively, but never without consideration of our two countries' mutual economic entanglement and the dangers and opportunities that this creates in the Sino-American relationship. Doing this well will be far from easy."

Given the centrality of foreign technology acquisition to the PRC's "Military-Civil Fusion" strategy — and the ways in which MCF's deliberate erasure of distinctions between "civilian" and "military" problematizes many traditional Western approaches to threat mitigation — this challenge is particularly acute in the arenas of national security export control implementation and visa screening. There, as elsewhere, we need always to be asking ourselves:

"To what extent can we pursue such cooperation without providing China with technological tools that will help it achieve its goal of seizing a geopolitical role for itself that displaces U.S. influence? ... How we balance the potential benefits from ... engagement with China against the considerable national security risks that now clearly exist from that very same engagement will require careful thought"

Unfortunately, however, providing a sound answer to this question has required us to recalibrate some of our approaches in light of the PRC's relentless emphasis upon MCF and its targeting of U.S. and other foreign technologies for both licit and illicit acquisition. As Secretary of State Pompeo made clear in a recent speech in Silicon Valley, the United States now takes these challenges very seriously, and we have been gradually reorienting the U.S. foreign policy and national security apparatus around the challenges of meeting this threat.

Our objective is to balance the long-standing values that have contributed to our success as a global leader in cutting-edge research with the security requirements we now face in light of the way in which PRC policy has placed the previous equilibrium in jeopardy. Even as we seek to preserve the integrity of an open and transparent academic system that attracts the most qualified candidates from around the world, regardless of nationality, to our outstanding educational and research institutions, we must act to prevent this system from being exploited for the benefit of our strategic competitors.

II. Technology Transfer Threats from Co-Opted Students and Researchers

I have commented at length publicly on other aspects of this U.S. recalibration, from changes we have made in U.S. regulations governing exports of civil-nuclear technology to adjustments to our export regulations concerning the PRC telecommunications company Huawei. The most recent U.S. adjustments of approach concern visa and entry policy, but it is worth emphasizing that even this is hardly a new issue. It has been clear for some time that recalibration was necessary here as well.

As I pointed out as early as September 2018, as we build global “coalitions of caution” with the increasing number of likeminded international partners who understand, and who are seeking to coordinate improved responses to, PRC technology-transfer threats, greater attention needs to be paid to the issue of “deemed exports” or “intangible technology transfer (ITT)” – that is, the less concrete and often inadvertent transfers of technology that can occur through engagements, as perhaps simple as an ordinary conversation, with students or researchers. While these knowledge exchanges are fundamental to academic and research collaborations in a Western university, laboratory, or technology company, such transfers of technology – of the “know how” or the “know why” of cutting-edge science and its applications – are also precisely what MCF seeks in its attempts to mine and exploit our open knowledge system to support the strategic objectives of the Chinese Communist Party (CCP).

Information can be transferred in a variety of ways, of course, including through both physical (tangible) and non-physical (intangible) means. Awareness of this makes placing at least some visibility into and check upon such

adventitious transfers just as important as are the explicit national security export controls that responsible nations have long – and with good reason – placed upon specific items themselves. MCF seeks to use such engagements for the benefit of the PRC’s military and security services, taking advantage of the enormous leverage the PRC system has over its students and researchers traveling abroad in service of state technology-acquisition objectives. And we shouldn’t help them.

It is worth remembering that, in sharp contrast to the situation in Western countries, any part of the technology sector in the PRC can be compelled to cooperate with state authorities. The PRC’s 2017 National Intelligence Law, for instance, requires *all* citizens and organizations to support, assist, and cooperate with national intelligence agencies and efforts. (Nor, of course, is that the only way in which the PRC can compel citizens abroad to serve its interests. In the police state that is the People’s Republic of China, the Party has enormous reservoirs of coercive power upon which it can rely in forcing even the most well-meaning traveler to cooperate with authorities back home, or to penalize him if he does not.) The PRC obliges its citizens to participate in these strategies, and has devoted significant state financing to develop its national defense science and technology ecosystem, which under MCF incorporates civilian researchers and academics into defense R&D efforts in ways that are often both compulsory and intentionally concealed. MCF, in other words, deliberately sets out to capitalize on the West’s traditional global ethos of free scientific and educational exchange, weaponizing that ethos in support of Beijing’s destabilizing geopolitical revisionism.

Nor does the PRC hide this ambitious effort. In China itself, the 13th Five Year Plan for Military-Civil Fusion Science and Technology Development explicitly calls for establishing collaboration with universities and research institutions in foreign countries that possess advanced technology. This is done, in part, to acquire that technology and bring it back to the PRC. Under MCF, the CCP is working to systematically reorganize the science and technology enterprise to ensure that new innovations simultaneously advance economic and military development. This ambitious endeavor relies significantly on the Chinese university system to develop the capabilities to undertake world class R&D and innovation.

At present, the PRC has as many as 100 specific state-directed plans that govern when and how to undertake

such foreign technology acquisition work. Since 2009, moreover, more than 150 Chinese universities have received special security credentials – eagerly sought as a signal of CCP and central government approval, as well as an opportunity for profitable work – that entitle them to conduct classified research and development on weapons and equipment for the PLA, and such institutions are critical components of the MCF apparatus. The PRC has also established National Defense Science, Technology, and Industry MCF Innovation Bases around the country, as well as MCF dual-use technology centers, MCF industrial parks, and other joint R&D facilities at which civilian firms and universities partner with defense sector firms and more traditionally defense-oriented universities for collaboration.

In the words of the state news agency *Xinhua* in 2018, the entire Chinese university system is considered to be the “front line” of MCF. And, as I testified to a U.S. Congressional commission in June 2019,

“[a]s befits the priority given to the ‘front line’ in any kind of struggle, the MCF system is working along multiple lines of effort to advance Chinese capabilities through the development of a talent pool of doctoral, masters, and undergraduate-level workers in STEM fields. The Chinese government certifies universities to undertake classified research and development on military contracts, as well as certifying them for weapons production – a policy known in China as the ‘three certifications.’ ... [T]his approach also includes implementing a policy under which state-owned defense enterprises fund the education of students at the undergraduate, masters, and doctoral level – even to the point of providing living stipends. These student subsidies turn their recipients into something akin to employees of China’s defense industry, especially since this support is given in return for a service commitment from the students to the companies that fund their education.”

Such practices of systematic “background obfuscation” can make it difficult to tell which Chinese researchers are “purely” civilians and which ones are being sent abroad, including by the PLA itself, to undertake advanced research and R&D in support of MCF objectives.

While many countries, including the United States, use civilian talent to advance military programs, MCF is fundamentally different and at odds with international

norms and practices. For example, the United States and its allies and partners all strictly observe a set of norms that govern permissible uses of certain technologies acquired through international trade. Trade in advanced, sensitive, and emerging technologies, in particular proliferation-sensitive advanced and dual-use technologies, is only possible by having confidence that end users will abide by the stated end-use and not divert it to unauthorized purposes, such as military end uses. In implementing MCF, however, the PRC system is specifically seeking to eliminate the barriers between China’s civilian research and commercial sectors, and its military and defense industrial sectors; if successful, MCF will render such a distinction between those two sectors meaningless.

The U.S. Federal Bureau of Investigation periodically publishes information designed to draw attention to the counterintelligence and economic espionage dangers presented by incautious engagement with PRC students and researchers, but it may be useful here to offer some illustrations:

- A student working with an American aerospace engineering professor at a U.S. university claimed to be affiliated with a PRC civilian institution, but turned out to be an expert on anti-satellite technology whose China-based address in the university directory corresponded to a college for PLA officers.
- A professor at a U.S. university who contributed to that university’s classified work for the U.S. Department of Defense turned out to be a member of the PRC’s “Thousand Talents Program” and both an advisor for a PRC government research institute and the lead scientist on an advanced technology project. This professor provided his institute in the PRC with research that closely resembled his classified work for the U.S. Defense Department.
- A biomedical researcher who entered the United States on a J-1 (student) visa ostensibly to conduct cancer-cell research at Beth Israel Deaconess Medical Center in Boston was arrested trying to smuggle 21 vials of research material to the PRC, and subsequently charged on multiple counts.

Such cases, alas, are distressingly common.

An additional aspect of these challenges at which we have been looking with increased concern in recent years is the activity of something called the China Scholarship Council (CSC), a non-profit organization affiliated with the PRC's Ministry of Education that supports international academic exchanges with China. We have become concerned that its programming sometimes closely tracks MCF directives to target sensitive U.S. research and development efforts, often with military applications, particularly in the United States and other Western countries. In January 2020, for instance, the CSC sponsored a student to study at Boston University. The U.S. Department of Justice later charged her with illegally acting as an agent of a foreign government after she concealed her affiliation with the PLA's National University of Defense Technology and pretended to be a civilian. (In fact, she was a PLA lieutenant.) CSC recipients must submit to embassy and consulate "management" abroad, which leaves them vulnerable to coerced participation in this and other types of activities — not only command-directed political agitation, but also potentially activities in support of MCF objectives. It is hard to escape the conclusion that CSC today sometimes functions as yet another instrument of the MCF apparatus.

All in all, therefore, we clearly have a problem on our hands. One way in which we try to meet these threats — while yet maximizing the benefits that can still flow from widespread international economic and technological interaction, including with PRC entities — is through visas. In addition to things such as law enforcement concerns, it is a well-established practice to screen visa applications for potential problems related to the proliferation of weapons of mass destruction (WMD), missile technology, conventional arms, and sensitive dual-use items. (Indeed, this is a major responsibility for my bureau at the U.S. Department of State, where we already vet more than 100,000 visa applications for such concerns every year.) The new U.S. rules affecting the entry of certain PRC nationals represent a modest and measured adjustment to U.S. procedures in response to the demonstrable challenges created by the "Military-Civil Fusion" strategy.

III. The New Approach

The new U.S. rules suspend the entry into the United States of any PRC nationals seeking F visas or exchange visitors seeking J visas to study or conduct research in the United States, except for a student seeking to pursue

undergraduate study, who either receives funding or is currently employed by, studies at, or conducts research at or on behalf of an entity in the PRC that we understand to be engaged in implementing or supporting MCF. In addition, the rules suspend entry of any PRC national seeking F or J visas, except to pursue undergraduate study, who *has been* employed by, studied at, or conducted research at or on behalf of an entity in the PRC that we understand to be engaged in implementing or supporting MCF.

It is worth emphasizing how focused, moderate and nuanced an approach this is, given the magnitude of the threat and the soaring ambition of the PRC's MCF strategy to incorporate essentially the *entirety* of China's civilian science and technology ecosystem for purposes of boosting the PLA's military might and supporting the CCP's destabilizing global revisionism. We are keenly aware of the enormous benefits that accrue to both countries as the brightest minds from around the world come to America as students and researchers, thereby enriching our superior system of higher education and the multiple dynamic and innovative sectors of our economy that still represent the global "Gold Standard" for excellence. As I have emphasized before,

"[t]hat we are able to attract top minds from all over the world speaks to the strength of our values, our education system, and our scientific prowess, and our universities' programs are all the stronger as a result. Many international students make significant contributions to science and technology, and would probably like to stay in the United States"

(As an example, no one can forget that nearly a fifth of the Fortune 500 companies were founded by immigrants.) We have no desire to damage these invaluable relationships, and our new policy will not do so.

Yet precisely because the PRC's MCF strategy *does* target U.S. universities, laboratories, companies, and other institutions on the cutting edge of the 21st Century's technological frontiers, the "business as usual" approach to engagement with the PRC that prevailed for decades before the U.S. public policy community awakened to these problems cannot be maintained. In light of what we now understand all too clearly about the PRC's approach to these issues, we have little choice but to prevent entry of those at highest risk of being exploited or co-opted by Beijing in order to come here not for mutual benefit but

instead to exploit our openness, and to appropriate for the CCP whatever it thinks will help Xi Jinping achieve his “Dream” of giving the PRC a military with capabilities superior to that of any other country by 2049.

Accordingly, we are seeking to strike a balance with this new policy, for we wish neither to impose some kind of technological “embargo” upon the PRC *nor* to allow it to continue plundering our intellectual property and diverting this knowledge to the PLA and the PRC security services. Much as we recently declared about our new approach to national security export controls vis-à-vis Huawei,

“the right answer surely lies between such asymptotes, and – as in so many other arenas – we will all suffer if we cannot navigate a prudent middle way between such extremes. In the arena of national security export controls, it is just such an Aristotelian Mean of a response that we have been trying to implement.”

To this end, for instance, we have made clear that

“[i]t is extremely important to put some national security brakes on the Chinese system’s massive technology transfer bureaucracy. It is also important, however, to avoid the unjustified conclusion that all Chinese students or technicians seeking to come here are threats – or that the solution to the national security problem with which the CCP’s strategy has confronted us is simply to shut down all ongoing engagements with the world’s second-largest economy. ... Even as we police against those who would take advantage of our openness to collect technology for those who seek to collect knowledge with which to do us harm ... we must also remain open and welcoming to Chinese talent that wants to work within our university and lab system to help push the frontiers of the emerging and even disruptive technologies that can help fuel mankind’s flourishing in the years to come.”

The new U.S. visa rules represent just such a middle way. What these new rules will do is to help us protect against those relatively few “bad apples” who come to the United States under false pretenses, taking advantage of our openness, and our ethos of collaboratively pursuing

knowledge, in order to build up the strength of those who wish us ill, and who arm and train themselves while envisioning *Americans* as their principal adversary. What these rules will *not* do is prevent legitimate Chinese students and researchers – the overwhelming majority of whom are most emphatically “good apples” – from coming here for mutual benefit as our two economies and two cultures try to build a better future together.

Already, out of the more than 1.5 million Chinese visitors who came to America in 2019, only a fraction were referred for nonproliferation visa screening, and only a tiny proportion were denied. Even as the recently announced changes give us new tools with which to fight technology-transfer threats, our new rules are not expected to add dramatically to the total number of visa denials, and such denials will continue to represent only a small proportion of the total pool of applications.

I have no doubt, of course, that the Chinese Communist Party’s propaganda apparatus will do everything it can to depict our moves in the worst possible terms. You should expect, for instance, to hear PRC diplomats, Party-controlled media outlets, and overseas propaganda assets offer a litany of vaguely substantiated but alarming imprecations, claiming that these rules supposedly represent paranoid and retrograde Cold War thinking which will demolish education and research collaboration in the United States. CCP propagandists may also try to toss empty *ad hominem* insinuations of racism into the mix, for political effect. This is all fictional nonsense. Do not believe any of it.

To be clear: such attacks will be baseless. The venom I expect from the PRC over these rules will merely signal Beijing’s frustration with the degree to which our new restrictions really *do* represent a setback for the CCP’s ongoing campaign to rob Americans in an effort to build up the People’s Liberation Army. Even while PRC propagandists vent their spleen, therefore, the United States will continue to welcome foreign students and researchers – including a great many Chinese ones – and our society and economy will continue to benefit from mutually beneficial, good-faith engagement with the brightest minds from around the world.

And that is quite as it should be.

* * *



Arms Control and International Security Papers

The Arms Control and International Security Papers are produced by the Office of the Under Secretary of State for Arms Control and International Security in order to make U.S. State Department policy analysis available in an electronically-accessible format compatible with “social distancing” during the COVID-19 crisis.